Department of Veterans Affairs **VHA DIRECTIVE 97-021**
Veterans Health Administration
Washington, DC 20420 **April 14, 1997**

PHASE OUT OF HALON FIRE EXTINGUISHING AGENTS AND HALON PORTABLE FIRE EXTINGUISHERS

1. **PURPOSE**: This Veterans Health Administration (VHA) Directive provides policy and guidance on the phase out of Halon as an agent in fixed piped fire extinguishing systems and portable fire extinguishers. It provides guidance on replacement fire extinguishing agents and alternative fire extinguishing systems, and policy and guidance on the protection of essential computer and data processing equipment and operations.

2. **BACKGROUND**

a. Environmental concerns regarding the stratospheric ozone layer protection of the atmosphere has led to the phase out of Halon (halogenated agents) and other chlorofluorocarbons (CFCs) production as of January 1, 1994, under the international agreement called the Montreal Protocol. Most of us are more familiar with the phase out of CFCs used in air conditioning systems and as propellants in aerosols as part of this agreement. Halons are chemically linked to CFCs and are used primarily in fire extinguishing systems and portable fire extinguishers to protect essential data processing installations and other essential electrical and telecommunications facilities. Although Halons only represent a very small portion of the quantities of chemicals being phased out under this agreement, Halons have a much more deleterious effect on the ozone depletion. Generally Halon is released to the atmosphere only when systems are initially tested, during actual discharge in a fire, or in accidental discharges.

b. Historically, Halon fire extinguishing systems and portable fire extinguishers have been installed in very few VHA facilities. Previous VHA policies on Decentralized Hospital Computer Program (DHCP) site preparations suggested their use along with other extinguishing systems in protecting this data processing equipment and operations. However, most Halon systems were installed to supplement automatic fire sprinklers systems and other fire protection features to minimize property damage and loss of critical data. The current Department of Veterans Affairs (VA) Construction Standard 866-1 on Computer Systems requires automatic wet-pipe fire sprinkler as the extinguishing system. Presently, VHA has approximately 30,000 pounds of halogenated agents in 82 systems at 44 VHA locations.

c. Although production has ceased, recycled Halon is still available via national "Halon banks," but it may become difficult to obtain. Halon may be basically reserved for essential national usage only as approved by the Environmental Protection Agency (EPA) and where other technically and economically feasible alternatives are not available. The cost of Halon gas is extremely high at approximately $10 per pound. Halon is not be available for new fire extinguishing systems.

d. EPA has approved several gases to be used as a replacement gas or with use in a new piped system. Generally, the existing system hardware cannot be re-used. New storage containers will be necessary, and other modifications to existing extinguishing system (replacement of nozzles, etc.) will be needed. These replacement gases and systems may be subject, in the future, to their own phase out due to environmental concerns. New technology, including "water-mist" systems, is now available as an alternate type of protection. ***NOTE:*** *See Attachment A for additional information on replacement agents and systems and proper disposal.*

3. **POLICY**: All existing Halon agents for fire extinguishing systems and Halon portable fire extinguishers shall be phased out of VHA facilities. All VHA essential computer and data processing equipment and operations shall be protected against fire.

4. **ACTION**

a. VHA facility Directors must develop a plan of action to phase out all Halon in fixed piped fire extinguishing systems. If a Director deems that a fixed piped gaseous total flooding fire protection system is still necessary, an acceptable replacement extinguishing agent and system shall be provided. In lieu of a gaseous system replacement, a water mist system may be used. Replacement agents and/or systems must be installed in compliance with the current edition of the National Fire Protection Association (NFPA) Standard 2001, Clean Agent Fire Extinguishing Systems. Water mist systems are to be installed in accordance with NFPA 750, Installation of Water Mist Systems.

b. VHA facility Directors must develop a plan of action to phase out any portable Halon fire extinguishers with an acceptable replacement type fire extinguishers. The current edition of the NFPA Standard 10, Standard for Portable Fire Extinguishers, is to be used in determining the proper type, number, and location of replacement portable fire extinguishers.

c. Plans of action must address funding, time frame, and proper disposal of Halon. The plan shall include for any contingency (i.e., an accidental discharge, the need for replacing Halon gas for fixed piped total flooding systems).

d. VHA facility Directors are to ensure that all locations housing essential computer and data processing, or telecommunications equipment and operations, be protected with a fire sprinkler system (preferably a wet-pipe type system) or water mist system. These locations are to be protected in accordance with the current edition of the NFPA Standard 75, Standard for the Protection of Electronic Computer/Data Processing Equipment. Facility Directors are to determine what equipment and operations are essential. ***NOTE:*** *At a minimum, all DHCP sites are to be considered essential.*

e. VHA facilities can consult with the Veterans Integrated Service Network (VISN) Safety Managers or the Safety and Fire Protection Engineers in the VISN for technical guidance

regarding compliance with NFPA Standard 75, Halon agent replacement, other fire protection systems (such as water mist), and the proper disposal of Halon.

f. All plan of actions must have a goal of phasing out Halon by September 30, 2000.

g. Disposal of Halon agent and Halon portable fire extinguishers shall be via the Defense Logistics Agency which is a recognized national "Halon Bank" depository.

h. If a VHA facility has an immediate need to replace Halon agents due to a discharge of a fixed piped system, replacement Halon may be used depending upon availability.

i. VHA facilities will cooperate with the annual Waste Minimization Survey administered by the National Cost Containment Center for determining progress on Halon removal and replacement.

5. **FOLLOW-UP RESPONSIBILITY**: The Engineering Management and Field Support Office (10NB) is responsible for the contents of this Directive. The point of contact is Kenneth Faulstich at (202) 273-5869.

6. **RESCISSION**: This Directive will expire September 30, 2000.

S/ by Mike Hughes for
Kenneth W. Kizer, M.D., M.P.H.
Under Secretary for Health

Attachment

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ATTACHMENT A

PHASE OUT OF HALON FIRE EXTINGUISHING AGENTS AND HALON PORTABLE FIRE EXTINGUISHERS

1. Alternative Agents for Halon Fire Extinguishing Systems

a. The Environment Protection Agency (EPA), under a program known as Significant New Alternatives Policy (SNAP), has approved several new chemicals as First Generation Agents (FGA) as "drop-in" replacements for total flooding Halon fire extinguishing systems. These agents have passed environmental, toxicity, and safety criteria. The National Fire Protection Association (NFPA) has published a new Standard 2001, Clean Agent Fire Extinguishing Systems, for the design, installation, testing, inspection, operation, and maintenance of these replacement agents as either an engineered or pre-engineered system. The standard addresses these new fire extinguishing agents. Some of the more common agents commercially available, which are suitable for use in normally occupied areas and have minimal ozone depletion characteristics, are listed as follows:

Agent Name	Manufacturer	Trade Name
FC-3-1-10	3M	PFC-410 or CEA-410
HFC-227ea	Great Lakes Chem. Corp.	FM-200
HFC-23	Dupont	FE-13

2. Other Systems and/or Protection

a. A different type of fire extinguishing system in lieu of a Halon replacement gaseous system is a water mist system. Basically a water mist system is a sprinkler system using very high water pressure and a continuous line of nozzles. The result is a water mist fog which rapidly fills the space using a minimum of water. The fire is extinguished as efficiently as possible, as the burning material is soaked and robbed of energy.

b. For the system to work, the space being protected is treated similar to a space being protected by a gaseous agent type system. The volume of space must be enclosed to prevent the water mist from escaping. The discharge must continue for a minimum amount of time to assure complete extinguishment. However, any water damage would be minimal. The amount of water used would be less than 10 percent of the amount of water expected from sprinklers and over 95 percent less than expected from a fire department using hose lines.

c. A new NFPA Standard 750, Installation of Water Mist Systems, is now available. This standard addresses the proper design, installation, inspection, test, and maintenance of water mist systems.

3. Disposal of Halon

a. EPA has not mandated that existing quantities of Halon be disposed via "Halon Banks," but they strongly encourage the practice. Although there are two organizations available to either receive the Halon directly or facilitate the disposal, the Department of Veterans Affairs (VA) has voluntarily decided to use the Defense Logistics Agency (DLA). DLA has formed a reserve of Halon for Department of Defense mission critical uses and is accepting recycled Halon from Federal Government users. The point of contact for the DLA is Vicky Goforth who can be reached at (804) 279-4525 or 6102.

b. The Halon Recycling Corporation (HRC) has been established as a non profit organization providing such services to the public. HRC is not an actual depository of Halon, but will act as an information network to assist both buyers and sellers of recycled Halon. The point of contact is Tom Cortina at (800) 258-1283.

4. Steps to Phase Out Halon and Provide Adequate Protection

a. Determine whether your facility has any Halon fire extinguishing system or Halon portable fire extinguishers.

b. Determine if any computer and data processing equipment or operations are essential at this facility.

c. Consult with the respective Safety and Fire Protection Engineer (SFPE) in each Veterans Integrated Service Network (VISN) for technical advice. If your VISN does not have a SFPE, contract with a fire protection engineering firm. Have the SFPE or contractor conduct an analysis of whether the essential equipment and/or operations are in compliance with NFPA Standard 75.

d. Determine whether to replace any Halon total flooding systems with a clean agent system or water mist system. Provide sprinkler protection, if needed.

e. Develop a plan of action to phase out Halon by identifying funding sources, a timeframe, and proper disposal of the Halon.

f. Contact DLA for disposal of Halon agent and portable fire extinguishers.

g. Provide or modify fire protection features in order to comply with NFPA Standards 75 and 10 as needed.